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THE REPORT ON SECONDARY SCHOOL STUDIES

At last we have the long expected report of the Committee of Ten appointed at the meeting of the National Educational Association at Saratoga on the 9th of July, 1892. It contains also the reports of the nine conferences (each composed of ten members), which the Committee of Ten organized on the subjects of Latin, Greek, English, other modern languages, mathematics, physics (along with astronomy and chemistry), natural history (biology, including botany, zoölogy and physiology), history (along with civil government and political economy), and geography (physical geography, geology and meteorology). The document is published by the National Bureau of Education. A weightier contribution to the great subject of national education has never before been presented to the American public. To President Eliot, the chairman of the Committee of Ten, all educators must feel, and the editors of this journal desire to express, sincere and profound gratitude.

It is to be hoped that the report will receive much consideration in the pages of *THE SCHOOL REVIEW*. The object of the present brief article is merely to break the ground for subsequent discussion. Now is the time for teachers who reflect upon the aim of their work and the best means of attaining it, and who know by experience the obstacles which in practice arise to thwart and cross them, to set their views before their fellow laborers, to compare them with the recommendations of the Committee of Ten, and to join in the praiseworthy endeavor to improve the secondary education of the country, which, as Commissioner Harris truly asserts, is "the most defective part" of our system. Such contributions will be cordially welcomed by the editors of *THE SCHOOL REVIEW*.

It is impossible within the limits of this introductory article to give an adequate conception of the rich contents of this report; nor is this perhaps necessary, for our readers will surely not fail to procure and read it. The appendix, containing the reports of the nine conferences, covers one hundred and ninety pages of small print, while the report of the Committee of Ten, based upon those reports, occupies fifty-nine pages. In regard to the work

of the conferences (which were made up in almost equal proportions of school and college men who were selected, with due regard to geographical distribution, on the ground of scholarship and experience), it is no exaggeration to say that in everything pertaining to matter, time, place, methods of instruction and examination for the branches of study considered, their reports form an invaluable if not altogether systematic and exhaustive treatise on the science and art of secondary education. I can scarcely conceive any teacher of language, literature, history, science, or mathematics, who would not derive useful suggestions from the report of the conference on his specialty, and the young teacher will find in it the pith and marrow of an applied pedagogy. I recommend the pamphlet with the greatest confidence as a text-book in normal schools and universities which have professorships of education.

Among the eleven questions submitted by the Committee of Ten to the conferences, were the two following concerning the best courses of study for pupils of supposed different destinations:—

“7. Should the subject be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those who, presumably, are going to neither?”

8. At what age should this differentiation begin, if any be recommended?”

The conferences unanimously answered the first of these questions in the negative, and the second, therefore, calls for no answer. And the Committee of Ten unanimously agree with the conferences. Though contrary to the general practice of American schools and academies, this conclusion rests on sound pedagogical principles. If there is a suitable age for the beginning of any study, all pupils should begin it at that age; if a certain allotment of time be required for the subject in each year or term, that time should be demanded of all pupils who take it; if there is a best method of instruction and examination, each pupil is entitled to the benefit of it:—and all without any regard whatsoever to the probable course of his future life or the point at which his education is to terminate. It is not of course intended that all pupils should pursue every subject for the same length of time; what is meant, however, is that they shall all be treated alike so long as they do pursue it. The adoption of this principle would lead to a great simplification in the programmes of our sec-

ondary schools and possibly to some reduction in the cost of maintaining them.

Of the remaining nine questions formulated as a guide for the discussion of the conferences, the first three have reference to the time to be allotted to the several subjects in an ideal school programme. The others are as follows:—

“4. What topics, or parts, of the subject may reasonably be covered during the whole course ?

5. What topics, or parts, of the subject may best be reserved for the last four years ?

6. In what form and to what extent should the subject enter into college requirements for admission ? * * * *

9. Can any description be given of the best method of teaching this subject throughout the school course ?

10. Can any description be given of the best mode of testing attainments in this subject at college admission examinations ?

11. * * * * Can the best limit between the preliminary and final examinations [at college entrance] be approximately defined ? ”

To the consideration of these questions concerning topics and methods the larger portion of the reports of the conferences is devoted. As the numerous suggestions and recommendations which they make are generally stated with the greatest conciseness, it would be futile to endeavor to give summaries of them within the limits of this article. As I have already indicated, the teacher who wishes to have the latest and best exposition of the science and art of teaching languages, history, mathematics or science must read these reports. While disclaiming any attempt to present abstracts of them, I will venture to call attention to certain important recommendations. For the sake of convenience some recommendations in regard to the time of beginning and the period of continuing the several subjects of study are incorporated here, although they are more properly connected with the first three questions which are still to be considered.

The Latin conference are of opinion that the formal requirements in Latin at present prevailing for admission to representative colleges ought not to be increased in quantity. But the preparation should begin at least a year earlier, and never later than at the age of fourteen. The conference recommend an increase in the work of translation at sight. They also advise greater

variety in the list of authors studied, recommending substitutes for Caesar's Gallic War.

The Greek conference voted to concur with the Latin conference in their recommendations as to the age at which the study of Latin should be begun. They would have Greek begun one year after Latin. The course in Attic prose should, in their opinion, consist of four books of the *Anabasis*, or better two books of the *Anabasis* and, (as an equivalent to the other two) portions of the *Hellenica* and some of the narrative parts of *Thucydides*. The conference recommend the study of *Homer*, if the schools give three years to Greek, and suggest that the *Odyssey* be preferred to the *Iliad*.

The English conference hold that the main direct objects of the teaching of English in schools are: (1) to enable the pupil to understand the expressed thoughts of others and to give expression to thoughts of his own, and (2) to cultivate a taste for reading, to give the pupil some acquaintance with good literature, and to furnish him with the means of extending that acquaintance. The conference describe how the subject should be taught from the beginning of the primary school to the close of the high school course. They emphatically assert that the study of literature means the study of the works of good authors, not the study of a manual of literary history. As to composition they hold that every teacher, whatever his department, should feel responsible for the use of good English on the part of his pupils. It is the opinion of the conference that the best results in the teaching of English in high schools cannot be secured without the aid given by the study of some other language, and that Latin and German, by reason of their fuller inflectional system, are especially suited to this end. The conference hold that, when a college or scientific school allows a division of admission requirements into "preliminary" and "final," English should be a "final" subject. The test in entrance English should, in large part, be the student's ability to write English as shown in his examination books on other subjects: the conference doubt the wisdom of requiring set essays.

The conference on other modern languages begin by recommending that an elective course in German or French be introduced into the grammar schools, the introduction to be open to children at about ten years of age. Though Latin may have the

same disciplinary value, living languages seem to the conference better adapted to grammar school work, both on account of the greater ease of teaching and learning them and because of their closer relation to the interests and ideas of to-day. The amount of work to be done in the high school is very considerable; and at the end of the courses pupils are expected to have acquired the ability to translate French or German at sight, to write in French or German, and to follow recitations conducted in French and German and to answer in the same language questions asked by the instructor. It is the opinion of this conference that college requirements for admission should coincide with the high school requirements for graduation.

The conference in mathematics recommend a radical change in the subject of arithmetic, that it be at the same time abridged and enriched. They suggest two improvements in the teaching of it, one, that the instruction be given a more concrete form, the other, that more attention be paid to facility and correctness in work. They recommend that a course of instruction in concrete geometry be furnished by the grammar school, and that it be given during the earlier years, in connection with the regular courses in drawing and modelling. Algebra should be begun at the age of fourteen; demonstrative geometry a year thereafter. One pedagogical maxim may be cited from this philosophical report: "As soon as the student has acquired the art of rigorous demonstration, his work should cease to be merely receptive. He should begin to devise constructions and demonstrations for himself."

The conference on physics, chemistry, and astronomy recommend that the study of simple natural phenomena be introduced into the elementary schools and that this study, so far as practicable, be pursued for at least one period per day by means of experiments carried on by the pupil. They believe that the study of chemistry should in high school work precede by one year the study of physics, and that both should be required for admission to college (which, in their unanimous opinion, should be by means of certificates from approved schools). They advocate the study of one subject as well as possible during the whole year in preference to two or more superficially during the same time. They emphasize their belief that the aim should not be to have the stu-

dent make a so-called re-discovery of the laws of these sciences. They hold that in secondary schools, physics and chemistry should be taught through didactic instruction and by text-book and laboratory work with note-book records. The conference make the explicit declaration that to give good instruction in the sciences requires more work of the teacher than to give good instruction in mathematics, the languages, etc.; and that the sooner this fact is recognized by those who have the management of schools, the better.

The conference on natural history recommend the general comparative morphology of plants and animals as the part of natural history most suitable for study in the secondary and lower schools; and they hold that in the primary and grammar grades there should be a study of gross anatomy, and in the secondary schools a study of minute anatomy and classification. Throughout all the work the aim should be to make the observations and notes of the pupils systematic, clear, and exact. Careful drawings should be insisted on from the beginning. The conference prescribe at least a year's work in natural history for the high school, and insist that it should be required for entrance to college in every course. In regard to method, the conference specify direct observational study with the specimens in the hands of each pupil, and urge that in the work below the high school no text-books should be used.

Of the remaining two conferences the reports are almost as bulky as those of the seven first described. The length and elaborateness of the reports are due to the fact that history and geography are more imperfectly dealt with in the schools than languages and mathematics, that their educative value is not understood, and that this defect and misapprehension can be removed only by an ample exhibition of what ought to be taught, and in what order, and by what method. These reports cannot be abstracted without great injustice.

The conference on history, civil government, and political economy, desire to have this subject studied from the beginning to the end of the school course—primary and secondary—with the exception of political economy. They deem it important that pupils in the grammar schools should know something of the history of other countries as well as their own. As to the best

method of instruction, the essentials, in the opinion of the conference, are trained teachers, good text-books, suggestive recitations, outside reading, written work, topical study, suitable illustrative material, and historical geography. In making their report this conference kept in view not the pupils preparing for college, but the school children, the larger number of whom will not even enter a high school.

The conference on geography present a report more radical by far than any other. They consider the subject in relation to both primary and secondary schools. But geography means for the conference, not only a description of the surface of the earth, but, as the report of the Committee of Ten puts it, "also the elements of botany, zoölogy, astronomy, and meteorology, as well as any other considerations pertaining to commerce, government, and ethnology"—a whole which "would bind together in one sheaf the various gleanings which the pupils would have gathered from widely separated fields." This conference present a minority report in which the writer complains that in the majority report geography has been sacrificed to geology and meteorology. This criticism appears to be just.

So much regarding the selection of topics in each subject, the best methods of instruction and examination, and the most desirable instruments and facilities for the work of the teacher and pupil. On all these matters one can only be thankful for such a valuable collection and collation of expert opinion; and if the reports of some of the conferences seem to imply a forgetfulness of the fact that the period of youth is short, and that there are many subjects to be studied, and that none of them—not even geography and history—can be learned in their entire extent and throughout all the complexity of their manifold ramifications and correlations by children of tender years, it must be remembered that each conference acted separately and, instead of balancing the respective claims of several subjects, strove only to make a strong presentation of the needs and demands of a single subject, which, in some cases, was earnestly believed to be suffering from neglect. Unfortunately, too, the Committee of Ten, though recognizing in set terms the indispensableness of "a comprehensive survey of the comparative claims of many subjects," shrinks from the difficult task of making it; and, as if to justify this fail-

ure, inconsistently suggests that a school may without detriment omit any of the subjects from its programme, provided only that those which are included are taught for the period and in the manner prescribed by the conferences. This leads, however, to the subject of time allotment, which, as it was previously postponed, we now proceed to consider. As has been already hinted, the important matter of the time to be given to each study was brought to the attention of the conferences in the first three of the questions submitted by the Committee of Ten, which read as follows:—

“1. In the school course of study extending approximately from the age of six years to eighteen years—a course including the periods of both elementary and secondary instruction—at what age should the study which is the subject of the conference be first introduced?

2. After it is introduced, how many hours a week for how many years should be devoted to it?

3. How many hours a week for how many years should be devoted to it during the last four years of the complete course; that is, during the ordinary high school period?”

We must here confine our attention to the answers given to the third question, which alone concerns the high school. Foreseeing this limitation, however, I have endeavored in the preceding abstract of the reports of the conferences to give some indication of the recommendations made in reply to the first question. In general all the conferences desire to have their several subjects taught earlier than they are at the present time, thus pushing a considerable portion of what is now high school work back into the elementary grades. But without recurring to that aspect of the matter which concerns the primary schools, let us look at the demands which, in response to the third question, are made by the various conferences for time allotment in the four years' course of the high school. This distribution of time among the different subjects of study is exhibited in the following table, which the Committee of Ten proposed on the basis of the recommendations of the conferences. A few minor changes were made by the committee; but with that exception the table is only a correlation and adjustment of the recommendations of the con-

ferences. The abbreviation "p." stands for a recitation period of 40-45 minutes; and the figure preceding it indicates the number of weekly periods assigned to the subject so designated. Supposing then, the recommendations of the conferences were carried out, the resultant programme for a secondary school would be as follows:

TABLE III

1ST SECONDARY SCHOOL YEAR.	2ND SECONDARY SCHOOL YEAR.
Latin 5P English { Literature 2p } 4P { Composition 2p } German (or French) 5P Algebra 4P History of Italy, Spain, and France 3P Applied Geography [Euro- pean political-continen- tal and oceanic flora and fauna] 4P <hr/> 25P	Latin 4P Greek 5P English { Literature 2p } 4P { Composition 2p } German, continued 4P French, begun 5P Algebra* 2p } 4P Geometry 2p } Botany or Zoölogy 4P English History to 1688 3P <hr/> 33P
3D SECONDARY SCHOOL YEAR.	4TH SECONDARY SCHOOL YEAR.
Latin 4P Greek 4P English { Literature 2p } 4P { Composition 1p } Rhetoric 1P German 4P French 4P Algebra* 2p } 4P Geometry 2p } Physics 4P History, English and Ameri- can 3P Astronomy 3p 1st ½ yr. } .. 3P Meteorology 3p 2nd ½ yr. } <hr/> 34P	Latin 4P Greek 4P English { Literature 2p } .. 4P { Composition 1p } { Grammar 1p } German 4P French 4P Trigonometry } 2P Higher Algebra } Chemistry 4P History (intensive) and Civil Government 3P Geology or Physiography, } 4p. 1st ½ yr. } 4P Anatomy, Physiology, and } Hygiene, 4p. 2nd ½ yr. } <hr/> 33P
* Option of book-keeping and com- mercial arithmetic.	* Option of book-keeping and com- mercial arithmetic.

But twenty periods a week are considered a maximum number. Every one of the four years, but especially the last three, offers, therefore, more instruction than any one pupil can receive. In this dilemma it would seem to have been incumbent on the Committee of Ten to make that "comprehensive survey of the comparative claims" of the several subjects which they had previously (p. 13) declared requisite in dealing with the matter of time allotment. If they had no intention of essaying so difficult an undertaking, I submit that it was an error in procedure not to have notified the conferences of that fact and asked *their* opinion on the comparative educational value of each subject as compared with every other. That the conferences would have answered the inquiry seems highly probable. Indeed, the conference on English volunteered the opinion that that subject should in college entrance requirements be valued at about one-sixth of the entire marks attainable in all subjects (and a student very deficient in ability to write good English should not be admitted at all); and the three conferences on physics, natural history, and geography, passed in a combined session, the significant resolution that one-fourth of the whole high school course ought to be devoted to natural science. Here is a declaration of the relative importance of certain subjects. And in the same way there must be a determination of the relative importance of all subjects in the curriculum of secondary schools. Would the claims of the modern languages, for example, have been set so high, had they been measured in a joint conference against the claims of the ancient languages? The Committee of Ten decided, and the wisdom of the decision deepens one's regret at the modesty which restrained them from going farther—that ethics, metaphysics, and some other branches of learning were not essential subjects in the curriculum of the secondary school. They also, I believe, selected the nine subjects which were referred to the conferences. Is it to be supposed that these subjects are all equally important if only they be taken extensively and consecutively enough? This certainly seems to be the conclusion of the committee. They tell us that if twice as much time is given to one subject as to another, the former will have twice the educational value; that different schools may select different sets of subjects, if only those selected are taught in a thorough manner, and that it is not neces-

sary that any school should teach all the subjects or any particular set of them; and, more explicitly, that the nine subjects may be considered of equal rank for the purpose of admission to college or scientific school. No matter what they are, if a pupil has spent four years in studying a few subjects thoroughly, he will, in the opinion of the committee, have attained the universal desideratum of strong and effective mental training.

The Committee of Ten, and some of the conferences as well, have fallen victims to that popular psychology which defines education merely as the training of the mental faculties. As though the materials of instruction were a matter of indifference! This preposterous doctrine would destroy the value of the committee's report; for there are many things in the universe besides the nine subjects referred to the conferences which will serve equally well to train the powers of observation, memory, recording, reasoning, etc. I believe that nothing so develops the faculty of observation as the milliner's business! And how the memory would be strengthened by storing up images of all the rainy days in the year!

No, education is not merely a training of mental powers. It is a process of nutrition. Mind grows by what it feeds on; and, like the physical, the mental organism must have suitable and appropriate nourishment. Intellect, with its so-called powers, is only one function of the mind: feeling and volition are co-present and co-essential. *And these three are one mind.* Now the pre-eminence of literature as educative material is due to the fact that, coming as poetry especially does from the intellectual and emotional depths of creative genius, it awakens, nourishes, and calls into activity, the corresponding potencies of those who are touched by its influence. Furthermore, language is the sole universal in the life of man. Language and literature are not merely liberalizing, they are *humanizing* studies. Through the humanity in them we realize our own individual human capacities. Now the language and literature which best serve this ultimate end of self-realization are our own. Consequently the vernacular is the beginning and end of a liberal education. The Greeks, to whom we owe our ideal of culture, knew no language but their own. But the minds of Greek school boys were steeped in their own noble literature. For our youth too I conceive that the essential and indispensable

element in a generous culture is the English language and literature. But as the very able and instructive report of the English conference states—though it had often been shown before—the best results in the teaching of English in high schools cannot be secured without the aid given by the study of some other language, which, in the opinion of all experts, should be Latin or a modern tongue. This reinforces the humanistic starting point, which is of the utmost importance. I have no doubt that from the vernacular as centre the entire scheme of secondary education, whatever it be, must, and in due time, if we apply ourselves to the problem, will be evolved.

To return to the report before us. The Committee of Ten—excepting President Baker who writes a brief but forcible dissenting opinion—assume that all subjects are of equal educational value, and construct four programmes for the secondary schools, which fulfill the conditions of using all the subjects mentioned in Table III and, in general, to the quantities there prescribed. It is admitted that under existing conditions in the United States, the last two programmes—modern languages and English—must in practice be distinctly inferior to the other two. The tables in full, without further comment, will be found on pages 96 and 97.

The report discusses in the closing pages the relations between the high schools and colleges. Recognizing that the secondary schools do not exist for the purpose of preparing pupils for colleges, and that their programmes therefore must not be constructed with reference to the colleges, the committee nevertheless feel that the colleges and scientific schools should be accessible to pupils who have completed creditably the course of the secondary schools. It is suggested that the colleges might accept for admission any groups of studies taken from the secondary school programme provided they aggregate twenty periods a week and promised, further, that in each year at least four of the subjects presented shall have been pursued at least three periods a week, and that at least three of the subjects shall have been pursued three years or more. This plan is, at any rate, conceived in the right spirit. It opens the college to the graduate of the high school, and yet the high school maintains its independence of the college.

I close, as I began, with an expression of admiration and gratitude for this report. Even if it does not settle the question of the curriculum of the secondary schools, it furnishes much of the material needed for its settlement. But the chief worth of the report lies in other directions, and in these it is simply invaluable.

J. G. Schurman

TABLE IV

Year	CLASSICAL THREE FOREIGN LANGUAGES (one modern).	LATIN-SCIENTIFIC TWO FOREIGN LANGUAGES (one modern).
I	Latin 5p English 4p Algebra 4p History 4p Physical Geography..... 3p <hr/> 20p	Latin 5P English..... 4p Algebra..... 4p History..... 4p Physical Geography 3p <hr/> 20p
II	Latin 5p English..... 2p *German (or French) begun 4p Geometry 3p Physics..... 3p History..... 3p <hr/> 20p	Latin 5p English..... 2p German (or French) begun. 4p Geometry..... 3p Physics 3p Botany or Zoölogy 3p <hr/> 20p
III	Latin 4p *Greek..... 5p English..... 3p German (or French) 4p Mathematics { Algebra 2 } { Geom. 2 } 4p <hr/> 20p	Latin 4p English..... 3p German (or French)..... 4p Mathematics { Algebra 2 } { Geom. 2 } 4p Astronomy ½ yr. and Mete- orology ½ yr..... 3p History 2p <hr/> 20p
IV	Latin 4p Greek 5p English 2p German (or French) 3p Chemistry 3p Trigonometry and Higher Algebra or History..... 3p <hr/> 20p	Latin 4p English { as in Classical 2 } { additional 2 } 4p German (or French)..... 3p Chemistry 3p Trigonometry and Higher Algebra or History..... 3p Geology or Physiog. ½ yr. } Anatomy, Physiology and } 3p Hygiene ½ yr..... <hr/> 20

* In any school in which Greek can be better taught than a modern language, or in which local public opinion or the history of the school makes it desirable to teach Greek in an ample way, Greek may be substituted for German or French in the second year of the Classical programme.

TABLE IV (Continued)

Year	MODERN LANGUAGES TWO FOREIGN LANGUAGES (both modern).	ENGLISH ONE FOREIGN LANGUAGE (ancient or modern).
I	French (or German) begun. 5p	Latin, or German, or French 5p
	English..... 4p	English..... 4p
	Algebra..... 4p	Algebra..... 4p
	History..... 4p	History..... 4p
	Physical Geography..... 3p	Physical Geography..... 3p
	20p	20p
II	French (or German)..... 4p	Latin, or German, or French
	English..... 2p	5 or 4p
	German (or French) begun. 5p	English..... 3 or 4p
	Geometry..... 3p	Geometry..... 3p
	Physics..... 3p	Physics..... 3p
	Botany or Zoölogy..... 3p	History..... 3p
	20p	Botany or Zoölogy..... 3p
		20p
III	French (or German)..... 4p	Latin, or German, or French 4p
	English..... 3p	English { as in others 3 } .. 5p
	German (or French)..... 4p	{ additional 2 }
	Mathematics { Algebra 2 } 4p	Mathematics { Algebra 2 } 4p
	{ Geom. 2 }	{ Geom. 2 }
	Astronomy ½ yr. and Mete- 3p	Astronomy ½ yr and Mete- 3p
	orology ½ yr..... 2p	orology ½ yr..... 3p
	History..... 2p	History { As in the Latin- 4p
	20p	{ Scientific 2 }
		{ Additional 2 }
		20p
IV	French (or German)..... 3p	Latin, or German, or French 4p
	English { as in Classical 2 } 4p	English { as in Classical 2 } 4p
	{ additional 2 }	{ additional 2 }
	German (or French)..... 4p	Chemistry..... 3p
	Chemistry..... 3p	Trigonometry and Higher
	Trigonometry and Higher	Algebra..... 3p
	Algebra 3	History..... 3p
	or History	Geology or Physiography
	Geology or Physiography	½ yr. and
	½ yr. and	Anatomy, Physiology and
	Anatomy, Physiology, and	Hygiene ½ yr. 3p
	Hygiene ½ yr. 3p	
	20p	20p